

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF VIRGINIA  
HARRISONBURG DIVISION

UNITED STATES OF AMERICA

v.

GERALD LEONARD DRAKE

CRIM. NO. 5:22-CR-00008

**Declaration of FBI Special Agent Ryan M. Taylor**

I, Ryan M. Taylor, hereby affirm and state as follows:

1. I am a Special Agent of the Federal Bureau of Investigation (FBI) and have been since January 2009. I am currently assigned to a Charlottesville Resident Agency out of the Richmond, Virginia field office of the FBI where I am assigned to investigate bombing and terrorism related violations of Title 18 United States Code and other violations of federal law.

2. I am a FBI Special Agent Bomb Technician (SABT). I am currently certified to conduct Render Safe Procedures on Improvised Explosive Devices (IEDs) and perform bomb technician operations. My training includes completion of the Basic Course at the FBI Hazardous Devices School, National Improvised Explosive Familiarization Course, Post Blast Investigators course, Advanced Manual Techniques course, Vehicle Borne IED Immediate Action Course, Intermediate and Advanced electronic courses, Electronic Countermeasures Certification course, FBI Stabilization course dealing with improvised nuclear devices, and the FBI Explosives Range Management course.

3. In addition to the above, I have attended numerous other bomb technician related courses and have instructed bomb technician related courses to include Basic Post Blast, Large Vehicle Bomb Post Blast, Large Vehicle Bomb Countermeasures, and IED Electronics. I have experience in international bombing cases and have completed several deployments to West Africa

over the last five years. I have a graduate certificate in Arson, Explosives, Firearms, and Toolmarks Investigation from Oklahoma State University. During my career at the FBI, I have also acquired knowledge and information about bombing matters from training, informants, defendants, other law enforcement officers, and other bombing investigations in which I have been involved.

4. I understand that this declaration is being submitted in connection with the United States's Sentencing Memorandum in the case of *United States v. Gerald Leonard Drake*, Case No. 5:22-CR-08. Accordingly, this declaration is limited to information concerning that memorandum and does not set forth all my knowledge in regard to explosives.

5. Black powder, smokeless powder, and Pyrodex are categorized as low explosives. Low explosives deflagrate (burn) rather than detonate (explode). They are used primarily as propellants. In a low explosive mixture, the burning is transmitted from one grain of low explosive to the next, and the gases produced build up as the powder burns. This build up causes low explosives to exert a rapid pushing effect rather than a shattering effect, which occurs in high explosives. Low explosives are used, however, in some blasting operations and are also frequently the filler for homemade pipe bombs.

6. A bomb using low explosives can be made by confining black powder, smokeless powder or Pyrodex, in a length of a pipe with end caps. When the confined powder is ignited, the rapidly produced and confined gases will create increasing internal pressures until the pipe container bursts and is torn apart by the pressure. Unlike high explosives, low explosives may be started on the combustion path by the application of a simple flame or acid /flame reaction. They also can be initiated by shock or friction and do not require the shock of a blasting cap. A simple example of the requisite shock or friction needed to initiate could be twisting off the end cap of a pipe bomb. If a single grain of powder is in the threads of the pipe, the metal-on-metal friction

between the internal threads of the end cap and the external threads of the pipe threads would be enough to ignite the powder.

7. Because black powder, smokeless powder, and Pyrodex are sensitive to friction, heat, impact, and sparks, they are one of the most dangerous explosives to handle. They are particularly sensitive to both electric and non-electric generated sparks and should therefore, be handled with wooden or plastic tools. As a further precaution, the body should be grounded before any physical contact with the powder. In any environment where black powder, smokeless powder, or Pryodex is handled, an individual should avoid wearing static electricity-producing clothing such as nylon, wool, or silk. Instead, an individual should wear cotton fabrics.

8. In summary, black powder, smokeless powder, and Pryodex are low explosives in themselves and extremely dangerous. When confined in a container, such as a pipe with end caps, the two create a dangerous device that can be initiated with heat, shock or friction.

I declare under penalty of perjury that the above is true and correct to the best of my knowledge and belief.

Executed this 10<sup>th</sup> day of August, 2023.

Respectfully submitted,

/s/ Ryan M. Taylor

RYAN M. TAYLOR  
Special Agent Bomb Technician (SABT)  
Federal Bureau of Investigation  
Charlottesville, Virginia